

Abstract of the Disclosure

A simple and accurate dead time dispersion measurement method and a voltage source inverter control method that can prevent the occurrence of an unstable phenomenon are provided.

The control method controls a voltage source inverter of a PWM system, which includes a power semiconductor device controlling a level of a voltage, a frequency and a phase. According to the control method, before operation, voltage error information for each polarity of respective phase currents of the inverter is stored. And during the operation, the voltage error information is read to compensate for a voltage instruction value or a pulse width of a PWM instruction signal, so that a voltage error can be corrected.

[Fig. 3]

3a: Determine level of DC current that flows during dead time dispersion measurement ... Set as I_d

3b: Change switch circuits 13A to 13C to side a, change switch circuit 13F to side b, and set dead time compensator outputs to Δ_{dup} , Δ_{dun} , Δ_{dvp} , Δ_{dvn} , Δ_{dwp} , Δ_{dwn}

3c: Set $\theta = 330^\circ$ for driving

3d: Change Δ_{dun} to equal $\text{abs}(I_w)$ and $\text{abs}(I_u)$, and store Δ_{dun} when they match.

[Fig. 4]

3a: Determine level of DC current that flows during dead time dispersion measurement ... Set as I_d

3b: Change switch circuits 13A to 13C to side a, change switch circuit 13F to side b, and set dead time compensator outputs to Δ_{dup} , Δ_{dun} , Δ_{dvp} , Δ_{dvn} , Δ_{dwp} , Δ_{dwn}

4c: Set $\theta = 60^\circ$ for driving

4d: Change Δ_{dup} to equal $\text{abs}(I_w)$ and $\text{abs}(I_u)$, and store Δ_{dup} when they match